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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/665,546 | 09/22/2003 | Hiroshi Taira | 117247 | 5939 |
| 25944 | 7590 | 04/18/2005 | EXAMINER | |
| OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320 | | | MRUK, GEOFFREY S | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2853 | |

DATE MAILED: 04/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/665,546 | Applicant(s) TAIRA, HIROSHI | |
| | Examiner Geoffrey Mruk | Art Unit 2853 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
 4a) Of the above claim(s) 13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>22 September 2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-12, drawn to an inkjet head apparatus, classified in class 347, subclass 68.
- II. Claim 13, drawn to method of producing an inkjet head, classified in class 29, subclass 890.1.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product claimed could be made by a materially different process such as mechanical milling.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

Claim 13 was withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 25 March 2005.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Higuchi et al. (US 6,802,596).

With respect to claim 1, Higuchi discloses an ink-jet head comprising:

- a passage portion (Fig. 10, cavities of elements 3, 31) in which a plurality of ink ejecting nozzles (Fig. 7, element 32) are formed, the passage portion including a plurality of individual ink passages (Fig. 10, element 12) running to the nozzles through pressure chambers (Fig. 7, element 8),
- a spaced portion (Fig. 10, element 66) spaced apart from and opposite to the passage portion,

- a driving portion (Fig. 10, element 27), bonded to a surface of the spaced portion facing the passage portion, for imparting squirting energy to ink in the pressure chambers (Column 18, lines 22-40),
- a power supply member (Fig. 10, element 41) electrically connected (Fig. 10, element 26) with the driving portion, for supplying driving signals to the driving portion (Column 18, lines 22-27),
- a protrusion (Fig. 10, geometry between elements 22 and 27) provided in at least either of the surface of the spaced portion facing the passage portion and the surface of the passage portion facing the spaced portion (Column 18, lines 13-19), and
- a sealing member (Column 18, lines 13-19, i.e. resin) disposed adjacent to the protrusion, for sealing a space between the passage portion and the spaced portion.

With respect to claim 2, Higuchi discloses a bonded portion bonded to the passage portion (Fig. 10, geometry between elements 3 and 22) while supporting the spaced portion (Fig. 10, element 66) to maintain a distance between the spaced portion and the passage portion (Fig. 10, cavities of elements 3, 31), wherein the protrusion (Fig. 10, geometry between elements 22 and 27) is provided opposite to the bonded portion with respect to the driving portion (Fig. 10, element 27).

With respect to claim 3, Higuchi discloses the protrusion (Fig. 10, geometry between elements 22 and 27) is provided in the spaced portion (Fig. 10, element 66).

With respect to claim 4, Higuchi discloses the protrusion (Fig. 10, geometry between elements 22 and 27) is opposite to the passage portion (Fig. 10, cavity of element 3) and has such a height that its front end is positioned at a level beyond a level of the opposite surface of the driving portion (Fig. 10, element 27) to the spaced portion (Fig. 10, element 66).

With respect to claim 5, Higuchi discloses the protrusion (Fig. 6, geometry between elements 22 and 27) is not opposite to the passage portion (Fig. 6, removal of element 66) and has such a height that its front end is positioned at a level beyond a level of the opposite surface of the passage portion to the spaced portion (Fig. 6, element 68).

With respect to claim 6, Higuchi discloses the power supply member (Fig. 10, element 41) is in abutment with at least either of the protrusion (Fig. 10, geometry between elements 22 and 27) and the passage portion (Fig. 10, cavities of elements 3, 31).

With respect to claim 7, Higuchi discloses wherein the power supply member (Fig. 10, element 41) is in abutment with both of the protrusion (Fig. 10, geometry between elements 22 and 27) and the passage portion (Fig. 10, elements 3, 31).

With respect to claim 8, Higuchi discloses the plurality of pressure chambers (Fig. 8, array of element 8) are arrayed in matrix along a bonded surface bonded to the driving portion (Fig. 7, element 27),

- wherein the driving portion has piezoelectric sheets (Fig. 11, elements 62, 63) extending across the plurality of pressure chambers (Column 18, lines 58-65)

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- and a plurality of individual electrodes (Fig. 8, array of element 26) arranged on the piezoelectric sheets to be opposite to the respective pressure chambers and is bonded to the passage portion (Fig. 7, elements 3, 31),
- and wherein the power supply member (Fig. 7, element 41) supplies driving signals to the respective individual electrodes of the driving portion (Column 17, lines 63-67; Column 18, lines 1-3).

With respect to claim 9, Higuchi discloses a whole area of the driving portion (Fig. 10, element 27) is opposite to the spaced portion (Fig. 10, element 66).

With respect to claim 10, Higuchi discloses the spaced portion (Fig. 10, element 66) includes an ink reservoir (Fig. 10, cavity of element 22) in which ink is stored and from which the stored ink is fed to the individual ink passages (Fig. 10, element 12) of the passage portion.

With respect to claim 11, Higuchi discloses an ink-jet head comprising:

- a passage unit (Fig. 10, cavities of elements 3, 31) in which a plurality of ink ejecting nozzles (Fig. 7, element 32) are formed, the passage unit including a plurality of individual ink passages (Fig. 10, element 12) running to the nozzles through pressure chambers (Fig. 7, element 8),
- a reservoir unit (Fig. 10, cavity of element 22) including an ink reservoir in which ink is stored and from which the stored ink is fed to the passage unit,
- an actuator unit (Fig. 10, element 27), bonded to the passage unit, for imparting squirting energy to the ink in the pressure chambers, and

- a power supply member (Fig. 10, element 41) electrically connected with the actuator unit, for supplying driving signals to the actuator unit (Column 17, lines 63-67; Column 18, lines 1-34),
- wherein the reservoir unit (Fig. 10, cavity of element 22) has a bonded surface bonded to the passage unit (Fig. 10, element 3) and a spaced surface extended across and spaced apart from the actuator unit,
- wherein a protrusion (Fig. 10, geometry between elements 22 and 27) is provided in an area of the spaced surface of the reservoir unit (Fig. 10, cavity of element 22), the area is opposite to the bonded surface (Column 18, lines 13-19) with respect to an area facing the actuator unit, and
- wherein the power supply member (Fig. 10, element 41) is in abutment with both of the protrusion and the passage unit, and
- a sealing member (Column 18, lines 13-19, i.e. resin) for sealing a space between the passage unit and the reservoir unit is disposed at the abutment portion.

With respect to claim 12, Higuchi discloses a width of the passage unit (Fig. 7, element 31) is not more than a width of the reservoir unit (Fig. 7, element 22).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wong et al. (US 6,188,414 B1) discloses a thermal actuated

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inkjet print head (Fig. 5a – 5c) containing a driving portion, protrusions, and sealing members.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey Mruk whose telephone number is (571) 272-2810. The examiner can normally be reached on 7am - 330pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GSM
4/8/2005


4/14/05
MANISH S. SHAH
PRIMARY EXAMINER